Clean Air Facts

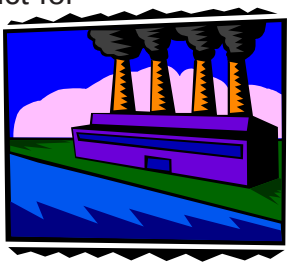
The General Organic Compound Rule in Section NR 424.03

SBCA-VOG-1100

To help decrease air pollution in Wisconsin, the Department of Natural Resources (DNR) created regulations to control emissions from operations with volatile organic compound emissions. These RACT (Reasonably Available Control Technology) regulations require a number of specific industries to reduce their VOC emissions. VOCs have been found to be a primary component in the formation of bad ozone (smog). If you don't belong in one of those specific industries but have organic compound emissions from your main process, you may be required to meet section NR 424.03 in the Wisconsin Administrative Code.

Does This Rule Affect My Business?

Do you operate a process line that emits organic compounds? A process line is "one or more actions or unit operations which must function simultaneously or in sequence in order to manufacture or modify a product." A unit might not be considered a process if there is no final product for sale. The DNR would determine whether your unit is considered a process. Any process line that must meet a requirement in chapters NR 419-423 is NOT required to meet the rule in NR 424.03.



What Are the Exemptions to This Rule?

While you have a process line that looks like it will have to meet these requirements, there are four possible exemptions to the rule:

- The process line is located outside the counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington and Waukesha, and the was NOT constructed or changed in some way since April 1, 1972.
- The process line is an organic compound-water separation system processing less than 200 gallons per day.
- The process line is an enclosed (on at least 3 sides) paint spraying operation with less than 30 pounds of VOC emissions per day.
- Any other process line that always has less than 15 pounds VOC emissions per day.

What Do I Do if I'm Exempt?

What you need to do to show that you are exempt from this rule will depend on which exemption could apply. If you are exempt solely because of where you are located and when the process line was constructed or changed, then you don't need to do anything else. If you are exempt because your emissions are below one of the exemption levels, then you will need to keep some records.

Each of the quantitative exemption levels is based on some quantity of either material used or VOC emissions over a

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set period of time. The time period in the exemption tells you how often you need to keep records. For the "pounds VOC per day" exemptions, you will need daily records to show you emit less than that level every day you operate. The most difficult part of this is calculating the quantity of your VOC emissions.

❶ Start keeping records of how much coating and thinning solvent you use daily at the process line, in gallons. Also, you should include VOCs from clean up solvents directly related to the process, like gun cleaner for painting operations.

❷ Get copies of the Material Safety Data Sheets (MSDS) for each coating and thinning or clean-up solvent you use on the process line. These should be available from your supplier. Look under the *Physical Characteristics* section of the MSDS and be sure it has either:

✔ VOC content in pounds per gallon (lb/gal), OR

✔ VOC content in percent (%) by weight (wt) and the Density of the coating in lb/gal.

❸ If you do not have the information necessary to get the value for VOC content in lb/gal, you should be able to get that information from your supplier. They should know the VOC content of the materials they are supplying to you. If you need to calculate it from the VOC content in percent by weight (% by wt) and the coating density, you can follow this example:

Equation:
Coating density (lb/gal)
X VOC Content (percent by weight) / 100
= VOC Content (lb VOC/gal)

For Example:
Coating Density = 14 lb/gal
VOC Content = 40 % by weight

Calculate:
14 lb/gal X 40/100 = 5.6 lb VOC/gal

❹ Once you have the VOC content in lb/gal, you can calculate the VOC emissions. Multiply the VOC content by the amount of coating used that day, in gallons and you have pounds VOC per day for that coating. If you used 5 gallons of the coating with 5.6 lb VOC for one day:

5 gal/day x 5.6 lb VOC/gal = **28 lb VOC/day**

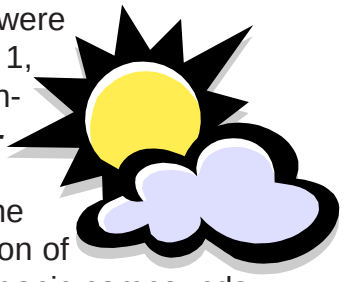
❺ Do this calculation for each coating, thinning and clean-up solvent that you used each day. Then add up the VOC emissions from all the coatings and solvents used to get the total VOC emissions in pounds per day. If this total is less than the daily exemption that fits your process line, you are exempt from the requirements in NR 424.

Any records you make need to be kept on site, whether paper or electronic, for five years.

How Does My Business Comply With This Regulation?

If you are not exempt from NR 424, there are a couple different levels of requirements that are based on the year of construction for the process line.

① If your process line installation occurred or if the last time any changes were made came before August 1, 1979, then you have to control ONLY ***photochemically reactive organic compounds*** by 85 percent. The DNR has a specific definition of how to determine which organic compounds those are, but basically it means they are compounds that have a certain level of reaction with sunlight to form other compounds (like ozone) when released into the air. Once you get the exact definition from the DNR, your supplier may be able to help figure out which of the organic compounds in your coatings and solvents meet the definition. If you are comfortable with it, DNR staff can also help you review your MSDS to determine which compounds meet the definition.



Some materials containing organic compounds don't actually contain any ***photochemically***

reactive organic compounds. If that were the case for you, then you would not be required to control the emissions from that material. If none of your materials contained any photochemically reactive organic compounds, then you would not be required to control your emissions at all.

② If the process line was installed on or after August 1, 1979, then you have to control **all VOC** emissions by 85 percent. DNR has a different definition for VOCs than it does for the photochemically reactive organic compounds.

③ If you can show the DNR that it is not feasible to control the emissions from your process line under requirements ① or ② above, you may be able to have alternate requirements applied. One scenario that is often considered infeasible is when you have a high exhaust flow and a low emissions rate. The conditions that are considered infeasible to control are very dependent on conditions at the particular process line under review and the cost to install an appropriate control device on that process line. DNR may be able to help you gather some of the information about cost of a control device, or you may consider hiring a consultant to perform that task for you. The SBCAAP has fact sheets on what to look for when hiring a consultant and a list of consultants that may be available to assist you.

If you can show the cost of control is infeasible, the alternate requirements that will then apply are called Latest Available Control Techniques and operating practices or LACT. LACT requirements are also very specific to the conditions at your process line. One example might be that because of the particular product you make, you may need to use a certain type of coating or other raw material. The VOC content in that coating or raw material is very high, say greater than 8.0 pounds VOC per gallon. Right now, you do not know of any other material with lower VOC content that works properly for your product. DNR may require as LACT that you work with your supplier and your customer to find a lower VOC content material to use on your product over the next 1-2 years, or some appropriate schedule. This is only one example, there are many other scenarios for LACT requirements in permits. You could ask DNR if there are any existing LACT determinations for process lines similar to yours.

④ One last alternative option is available to you under section NR 424.03. If one of the RACT requirements in ch. NR 422, Wis. Adm. Code, fits your type of process but you are otherwise exempt from the rule in NR 422, you could choose to meet the limit anyway. In some cases this is the easier option because the VOC containing materials available to many industries are already manufactured to meet the RACT limits in NR 422. If you use materials that already meet a RACT rule in NR 422, you could end up with minimal changes in your operations to comply with NR 424.03.

Getting Assistance

This is just a quick summary of the requirements under section NR 424.03 of the Wisconsin Administrative Code, which are very complex. You may want to contact one of the resources listed below if you are uncertain how something in NR 424.03 applies to you.

Contacts for More Information or Assistance.

The Small Business Clean Air Assistance Program helps smaller businesses understand and comply with the Clean Air Act regulations. Contact one of the program's Clean Air Specialists for more assistance: Renée Lesjak Bashel at 608/264-6153 or Tom Coogan at 608/267-9214.

For further information on the general organic compound rule in NR 424.03 contact your DNR Regional or Service Center office shown on the **DNR Contact Fact Sheet** or the DNR's Central office at 608/266-2856.